

CLAIMS

What is claimed is:

1. A method for correcting skew images comprising the steps of:
 - (a) detecting a plurality of edge areas on an image, each of the edge areas having an edge;
 - (b) calculating a plurality of gradient angles of the edge areas to sum up weightings of the gradient angles; and
 - (c) rotating the image according to the gradient angle with the highest weighting;wherein the edge represents that the maximum display difference in each of the edge areas is larger than a threshold.
2. The method of claim 1, wherein the edge areas are determined by the steps of:
 - (i) grouping the image into a plurality of blocks, each of the blocks having $N \times N$ pixels, wherein N is an odd number except 1;
 - (ii) grouping the pixels into a plurality of pixel groups according to a plurality of grouping angles;
 - (iii) calculating the display differences between the adjacent pixel groups according to each of the grouping angles;
 - (iv) confirming that the maximum display difference is larger than the threshold; and
 - (v) defining the blocks with the edges as the edge areas.
3. The method of claim 2, wherein the blocks are grouped into the pixel groups by the grouping angles of 0° , 45° , 90° or 135° to a horizontal coordinate axis.
4. The method of claim 2, wherein the display difference is the difference of display parameter sums between any two of the adjacent pixel groups.

5. The method of claim 4, wherein the display parameter sum is the sum of the display parameters of the pixels included in each of the pixel groups.
6. The method of claim 5, wherein the display parameter is a luminance value or a chrominance value of each of the pixels.
- 5 7. The method of claim 1, wherein the display difference is a luminance difference or a chrominance difference.
8. The method of claim 1 further comprising a confirming step performed after step (b), the confirming step confirming that the gradient angles are in a predetermined range.
9. The method of claim 8, wherein the range is between -89° to 89° .
- 10 10. The method of claim 9, wherein the optimal range is between -45° to 45° .
11. The method of claim 1 further comprising a step of outputting a caution message.
12. The method of claim 1 further comprising a step of adjusting the boundaries of the image after rotated.
13. The method of claim 1, wherein the gradient angles is calculated by using Sobel
15 operators.